

Work Order ID 132753***132753***

Page 1

Thursday, May 07, 2015 3:10:47 PM

Item ID: D2962-150

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: 3.540 Outer Tube, Extrud

70 CL MAR 20 2015

Start Date: 5/7/2015 Start Qty: 3500

~~*25*~~

Cust Item ID:

Required Date: 5/7/2015 Req'd Qty: 3500

~~*25*~~

Customer:

Reference:

Approvals:

Process Plan: CL

Date: MAR 08 2015

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D2962

B

100

0.00

100

PURCHASING

Purchasing

Purchasing

Memo

Issue P/O: 28530

0.00

a) Extrude as per Dwg D2962

b) Material: 6061-T6 (QQ-A-200/8)

c) Minimum yield tensile strength = 35 ksi

d) Minimum ultimate tensile strength = 40 ksi

e) Minimum elongation = 8%

f) Order at 150" long

g) Bon L Canada Inc. tool # DAA-897127

***EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE
SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH
AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS,
OR DENTS.***

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

CL MAR 20 2015 70

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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Work Order ID 132753

132753

Page 2

Thursday, May 07, 2015 3:10:47 PM

Item ID: D2962-150 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: 3.540 Outer Tube, Extrut
 Start Date: 5/7/2015 Start Qty: 35.00 *35* Cust Item ID:
 Required Date: 5/7/2015 Req'd Qty: 35.00 *35* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
120	QC6- Inspect dimensions to drawing	0.00							
120									
QC	Memo	0.00							
Quality Control	Check Pull test per Dwg D2962 for compliance page attached. Check hardness with Webster tester								
130	Identify as per dwg & Stock Location: <i>Hold</i>	0.00							
130									
Packaging	Memo	0.00							
Packaging									

71 8015-06-10

71 15-06-15 DAS 9 9-89
P.T.O.

ND 05-6-17
 71

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Root Cause		FAULT CATEGORY																							
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Work Order ID 132753

132753

Page 3

Thursday, May 07, 2015 3:10:47 PM

Item ID: D2962-150

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: 3.540 Outer Tube, Extrud

Start Date: 5/7/2015 Start Qty: 35.00

35

Cust Item ID:

Required Date: 5/7/2015 Req'd Qty: 35.00

35

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MLJ

JUN 18 2015

MLJ JUN 18 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Picklist Print

Thursday, May 07, 2015 3:10:47 PM

Page 1

Work Order ID: 132753

132753

Parent Item: D2962-150

D2962-150

Parent Item Name: 3.540 Outer Tube, Extrut

Start Date: 5/7/2015

Required Date: 5/7/2015

Start Qty: 35.00

Required Qty: 35.00

Comments: IPP Rev:A New Issue 06-06-20 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2962-150P		Purchased	No			110	Each	0.0000	1	35.71			
D2962-150P									**	71x			
3.540 Outer Tube, Extrut													

SP15-06-10

DQA: _____ Date: _____



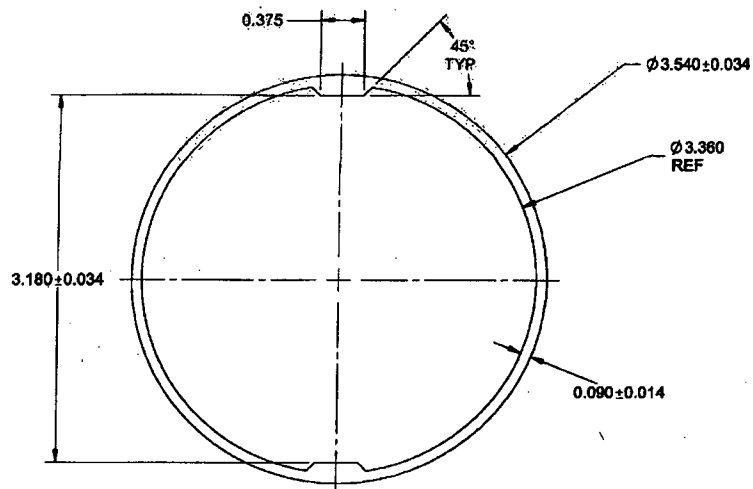
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

8 7 6 5 4 3 2 1



QY MAR 08 2015
W/O: 132753

RELEASED
2013-06-21
AP

NOTES:

- 1) MATERIAL: 6061-T6/T6510/T6511 ALUMINUM PER AMS-QQ-A-200/8 (OR AMS 4160) OR ASTM B221
MINIMUM YIELD TENSILE STRENGTH = 35 ksi
MINIMUM ULTIMATE TENSILE STRENGTH = 40 ksi
MINIMUM ELONGATION = 8%
A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES.
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.016 TO 0.025 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N AND B/N PER DART QSI 044 6.1
- 7) WEIGHT: 0.105 lb/in
- 8) MANUFACTURED USING BON L CANADA DIE # DAA-3
- 9) NO TOOLING MARKS
- 10) ORDER AS D2962-XXX WHERE XXX = LENGTH IN INCHES
EG. 125 LONG: D2962-125

B	UPDATE FORMAT AND EXTRUSION TOLERANCES	SFM	13.05.08
A	NEW ISSUE	RF	00.03.10
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE USA, INC KENT, WA	
DRAWN	SFM		
CHECKED	AP	DRAWING NO.	REV. B
MFG. APPR.	AP	D2962	SHEET 1 OF 1
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	EXTRUSION	NTS
DATE	13.05.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

8 7 6 5 4 3 2 1



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO28530**

Purchase Order Date 5/20/2015

PO Print Date 5/20/2015

Page Number 1 of 2

Order From :

VC-BON001

SIGNATURE ALUMINUM CANADA INC.
C/O/ T10322C
P.O. BOX 4488, STN A
TORONTO, ON M5W 4H1
CA

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

PO 28530

Contact Name

Vendor Phone 905-427-6550

Ship To Contact

Ship To Phone

Ship Via: Yours ppd

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
Line Comments			Promise Date				
Delivery Comments							

1	D2962-150P	3.540 Outer Tube, Extrut	6/10/2015		70.00	\$51.26	\$3,588.16
			Yes		Each		

EXTRUDE AS PER DWG D2962 REV. B MAT: 6061-T6
(QQ-A-200/8) MIN. YIELD TENSILE STRENGTH = 35 KSI
MIN. ULTIMATE TENSILE STRENGTH = 40 KSI MIN.
ELONGATION = 8% LENGTH: 150"

EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

5015-06-10

Line Total: \$3,588.16

2	71401-45	PROCUREMENT QUALITY CLAUSES	6/10/2015		1.00	\$0.00	\$0.00
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No

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

Note:

5/20/2015



1850 Clements Road, Pickering Ontario, Canada L1W 3R8

Phone: (866) 587-5780 Fax: (905) 427-2207

Visit us at www.signaturealum.com

INVOICING AND COMPANY LOCATION

SIGNATURE ALUMINUM CANADA

1850 CLEMENTS ROAD

PICKERING ON L1W 3R8

PACKING LIST

ACCT# 46024

SHIP TO / EXPÉDIÉ À DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA PHONE: 613-632-5200				SOLD TO / VENDUE À DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA PHONE: 613-632-5200				TERMS / FREIGHT PP		REFER TO THESE NUMBERS ON ALL CORRESPONDANCE REFEREZ-VOUS A CES NUMEROUS POUR TOUTE CORRESPONDANCE		PACKING LIST DATE / DATE DU BODEREAU 06-08-15	
CUSTOMER ID / ID DU CLIENT 46024		ORDER DATE / DE LA COM 05/21/15		CUSTOMER PO NUMBER / CLIENT PO Nombre PO28530				JOB / FICHIER		FIELD SALES REP / REP REGIONAL DES VENTES G.ATTENBOROU		SALES REP / REP. DES VENTES R. BLAIS	
BILL OF LADING NUMBER / NO. DE CONNAISSEMENT 020880				CARRIER / TRANSPORTEUR WILRIDE				SALES ORDER NUMBER / N° DE COM 119026		SALES REP / REP. DES VENTES R. BLAIS		CUST SERVICE REP / REP. SERVICE CLIENTELE M2A	
ITEM NO. / NUMÉRO	ORIGINAL ORDER QUANTITY / Quantité d'ordre ORIGINAL	UNIT / UNITÉ	PREVIOUS SHIPPED QUANTITY / PRÉCÉDENT Quantité livrée	MFG. PART NUMBER / MFG. PARTIE NUMÉRO DAA-3-2 D2962150P	ALLOY & TEMPER / ALLIAGE & TEMPER 6061 T6	FINISH DESCRIPTION / DESCRIPTION DE FINITION 150.0000 IN	NBR OF PKGS / NBR DE PKGS 3	GROSS LBS / LIVRES BRUT 1,206	NET QUANTITY / QUANTITÉ NETTE 1,096	UNIT / UNITÉ LB	QUANTITY DUE / Quantité en raison		
001	1,105	LB											
	501	KG						547			497	KG	
	70	PC									71	PC	
Cut(+): 0.1180 Cut(-): 0.0000 Min: -10 % Max: 10 %													
						851916 / 260973	1	472			432		28 PC
						851916 / 260974	1	472			432		28 PC
						851916 / 260975	1	262			231		15 PC

Sp15-0010

Transportation/Traffic damages and/or shortage claims are to be noted on the delivery copy of sellers shipping packing lists and signed and dated below by customers authorized representatives.

No return materials will be accepted for credit without permission. The articles and/or services covered by this shipping packing list were produced in accordance with the fair labor standards act of 1938 as amended. Order accepted subject to the terms and conditions stated on the reverse side.

CUSTOMER ACKNOWLEDGEMENT OF GOODS DELIVERED AND CONDITION

Page 1

DATE OF DELIVERY

DRIVER

3	1,206	1,096	LB
	547	497	KG
		71	PC
TOTALS			



signature
aluminum
CANADA INC

SIGNATURE ALUMINUM CANADA

1850 CLEMENTS RD
PICKERING, ON L1W 3R8

CERTIFICATE OF COMPLIANCE

Cert Date	Cert No.	Sales Order	Page
06/07/2015	5357575	119026	1
Cust PO	B/L No	Lot	Date
PO28530	020880	851916	06/08/15

Sold To		Ship To	
46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA		46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA	
Item No	Part No	Item Description	Cust Part
001	DAA-3-2	150" MILL 6061 T6	D2962150P
Gross Weight	1,206 LBS		
Net Qty	1,096 LBS	71 PCS	3 PKGS
Specification		Die Desc	
AMS QQA 200/9 + ASTM B221-08			

Mechanical Tests:

Tensile	Yield			
MPA / KSI	MPA / KSI	% Elongation	Conductivity	HRE
302.8 / 43.9	276.6 / 40.1	9.8	N/A	92

Chemical Analysis:

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	V	Zr
0.62	0.29	0.21	0.06	0.89	0.06	0.06	0.02	0.01	0.00

85506-10

This Material is Made in Canada

This Material is RoHS Compliant

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Mazzotta
Director of Quality
Signature Aluminum Canada Inc



ISO 9001/TS16949 Registered Company

Visit us at www.signaturealum.com

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: 15-06-11
 DATE: D2962-150

PO / BATCH NO.: P028530/B132753

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 71
 QUANTITY INSPECTED: 71
 QUANTITY REJECTED: 0

THICKNESS ORDERED: _____
 THICKNESS RECEIVED: _____
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL	(Y) N	
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT MATERIAL	(Y) N	
CORRECT REF # TO LINK CERT	(Y) N	<u>P028530</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	<u>D2962-1501</u>
CORRECT M# ON THE MATERIAL	(Y) N	<u>B132753</u>
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION INSPECTED BY: <u>DAS 9 9-89</u> DATE: <u>15-06-11</u>	ENGINEERING SIGNOFF (if required) SIGNED OFF BY: _____ DATE: _____
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Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

- 1- VERIFY STOCK TO DART PURCHASE ORDER
- 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a. WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
- 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
- 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
- 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
- 6- REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

- 1- VERIFY TO DART SUPPLIED DRAWING
- 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
- 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
- 4- VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING

AFTER MATERIAL PASSES INSPECTION

- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN **20pcs** FOR FULL INSPECTION
- 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN. HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d. STRAIGHTNESS @ CENTER OVER 12" SPAN
 - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2.....) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER